

SCIENTIFIC RESULTS FROM THE MAMMAL SURVEY.

No. XXXVI.

ON THE CAPPED LANGURS (*PITHECUS PILEATUS*, BLYTH, AND ITS ALLIES).

BY MARTIN A. C. HINTON.

(Published by permission of the Trustees of the British Museum.)

"*Semnopithecus pileatus*" was described by Blyth in 1842 (*J. A. S. B.*, XII, p. 17-4) from a half-grown female received by the Calcutta Museum from the Vice-regal menagerie at Barrackpore. Ignorant of the real provenance of this specimen, Blyth was at first inclined to identify it with Desmarest's "*Cercopithecus albocinereus*", described from Sumatra. But in 1844 he received two specimens collected by the Reverend J. Barbe in the Chittagong Hills, together with the information from Mr. Skipwith (then Judge in Tipperah) that *pileatus* abounded in the skirts of the hills of Tipperah, retiring far into the interior during the rains, and it "would appear also to extend sparingly upon the Naga range eastward of Upper Assam" (*J. A. S. B.*, XIII, p. 467). Blyth in 1846 (*J. A. S. B.*, XVI, p. 735) received an adult male collected by Skipwith in Tipperah, and from that time forward he expressed no doubt as to the habitat of the species. Thus in his "Catalogue" of 1861 (p.12) he gave the habitat of *pileatus* as "Nagas, and hill ranges of Sylhet, Tipperah, Chittagong."

Mr. H. W. Wells and Mr. J. P. Mills have lately made most valuable collections in Assam for the Society's Mammal Survey. These includes a fine series of Capped Langurs, illustrating the geographical variation of *P. pileatus* in the country to the south of the Brahmaputra, between the Garo Hills on the west and the Nagas with the district of Lakhimpur on the east. In addition Mr. Wells obtained a number of specimens, also referable to this species, from the northern side of the valley of the Brahmaputra, in Northern Kamrup. Death having deprived us of the invaluable assistance of Mr. Wroughton, the duty of working out this portion of the collections from Assam devolved upon me, the results of my studies may be briefly stated as follows.

In the first place while all the specimens collected by Mr. Wells and by Mr. Mills in Assam are referable to *P. pileatus*, this species does not appear to have been represented previously in the National Collection. The form believed to have come from Cachar or from Lower Assam, which Wroughton identified (*J. B. N. H. S.*, 25, p. 557) with *pileatus* appears now to be distinct; and the name "*durga*," which Wroughton (in mistake) first applied to it (*op. cit.*, 24, p. 564), becomes valid.

With regard to *pileatus* proper, the Survey material shows that there are three well marked geographical races or subspecies. Firstly, a pallid form, which agrees very well with the descriptions of the type

given by Blyth and Anderson, and which may therefore be regarded as the typical subspecies *P. p. pileatus*. This inhabits the Garo and Khasi Hills, whence we have specimens from localities situated at levels between 1,400' and 2,000' ; but it also ranges far to the east into the Naga Hills, where however, it is, as I am informed by Mr. Mills, a purely highland animal, not mixing with the next form to be noticed, but living alone in the cool jungle met with at heights of from 4,000' to 5,000'. On the floor of the valley of the Brahmaputra in the Lakhimpur district occurs a form, characterized by a much richer and more normal coloration ; this is described below as a new subspecies *P. p. saturatus*, the range of which extends southwards for some distance up the lower slopes of the Naga Hills. Lastly the subspecies living on the opposite bank of the Brahmaputra in Northern Kamrup is distinguished by its exceptionally dusky coloration, especially noticeable upon the rump and thighs, and this is described below as *P. p. tenebricus*.

All these subspecies of *pileatus* are animals in which the light-coloured underparts and the flanks are sharply and strongly contrasted with the darker dorsum. In *P. p. pileatus* and *p. saturatus* the dark dorsal area is relatively narrow, so that the bright flanks are very conspicuous features in the dorsal view of the animal. The skulls do not appear to afford any character by which the subspecies can be distinguished either from each other or, apart from the size of the teeth, from the forms next to be noticed. The cheek-teeth in all three races of *pileatus* are small, the upper tooth-row (canine to *m.* 3) measuring 33·5 to 37·5 mm., while the length of the three molars ranges between 18·2 and 20 mm.

The three remaining species of the group, viz., *P. shortridgei*, Wr., (Upper Chindwin), *P. durga*, Wr., (Cachar or Lower Assam), and *P. brahma*, Wr., (Lakhimpur), have the colour and pattern duller and much less conspicuous than in *pileatus*. In *P. brahma* the teeth are small as in *pileatus*, but in *durga* and *shortridgei* they are distinctly though slightly larger (canine to *m.* 3, 37 to 38·5 mm., *m.* 1 to *m.* 3, 20·5 to 21·5 mm.).

The following is a " key " to the six members of the *pileatus* group recognized in this paper :—

- A. Colour pattern bright and conspicuous. Under parts (including the upper flanks) well-haired, and always strongly contrasted with the dark mid-dorsum. Tail with its proximal half concolorous with the back, its distal half black. Teeth small (Canine to *m.* 3, 33·5–37·5mm ; *m.* 1–3, 18·2–20mm).
- a. Dark mid-dorsal area narrow, the bright flanks conspicuous in the dorsal view. Rump and outer surfaces of thighs not dusky.
- a. General colour of back neutral grey, paling to smoke grey on rump. Whiskers pale ochraceous. Flanks and inner surfaces of limbs white. Ventral surface ochraceous.

P. pileatus pileatus, Blyth.

(Garo Hills, east to Nagas).

- b. General colour of back dusky brown, the rump darker than in *a*.
Whiskers, flanks, under parts bright orange.

P. p. saturatus, subsp. n.

(Lakhimpur and lower slopes of Nagas).

- b. Dark mid-dorsal area not contrasted, the bright flanks scarcely or not visible in the dorsal view. Rump and outer surfaces of thighs blackish, like the head and back. Whiskers, flanks, and under parts intensely ochraceous.

P. p. tenebricus, subsp. n.

(North Kamrup).

- B. Colour pattern dull and inconspicuous, the upper flanks concolorous with the back. Under parts less strikingly, or not at all, contrasted often thinly haired. Tail with not more than the proximal third concolorous with back, its distal two thirds black.

- a. Teeth large (upper canine to *m.* 3, 37–38·5 mm ; *m.* 1 to *m.* 3, 20·5–21·5 mm.)

- a. General colour cinerous. Whiskers only slightly paler than the general body colour. Under surface coloured like the back.

P. shortridgei, Wr.

(Upper Chindwin).

- b. General colour dusky brown ; Whiskers and under surface ochraceous.

P. durga, Wr.

(Lower Assam).

- b. Teeth small (upper canine to *m.* 3, 35·5 mm ; *m.* 1 to *m.* 3, 19·7 mm.).

General colour cinerous ; whiskers pure white ; under surface greyish on chest, buff on the abdomen.

P. brahma, Wr.

(Lakhimpur, Upper Assam.)

With regard to the status of these six forms there can be no doubt that all are very closely related to each other ; and when the ranges of *durga* and *brahma* become better known it may be possible to treat them all as subspecies of one widely ranging species *P. pileatus*.

P. argentatus, Horsfield, remains to be noticed. The type of this nominal species, as traced by Wroughton, is a specimen now in the British Museum (No. 79.11.21. 597) obtained from Sylhet. Wroughton treats the name *argentatus* as a synonym of "*pileatus*", that is to say of the form called *durga* in this paper ; and could this identification be supported, the name *argentatus* would, by the law of priority, have to replace the much later name *durga*. But the type of *argentatus* is a young specimen and in my opinion not determinable with precision ; all that can be said of it is that it is a member of the *pileatus* group.

I. *Pithecus pileatus pileatus*, Blyth.

Garó Hills.—Tura (1,400'), ♂ 282, adult, and three flat skins.

Khasi Hills.—Laitkynsao (2000'), ♂ 521, juv.

Jaintia Hills.—Ranang (4,800'), ♂ ad. 918 Konshong (3,000'), ♂ juv. 855 ; ♀ juv., 861.

Naga Hills.—Mokokchung (5,000'), ♂ and ♀ ; Cholimsen (4000'), —

General colour of dorsal surface neutral grey, darkest on top of head, where it is almost black, gradually paling towards the rump

where it becomes smoke-grey. Whiskers pale ochraceous, white posteriorly. Flanks whitish above, in strong contrast with the narrow dark dorsal area, and conspicuous in the dorsal view of the animal; the flank colour becomes yellower below, to merge insensibly in the general ochraceous tint of the ventral surface. Outer surfaces of the arms pale smoky grey; their inner surfaces cream-coloured. Legs with the outer surfaces of thighs neutral grey, concolorous with the middle of the back, the tint gradually lightening downwards to become white between the knee and the ankle; inner surfaces white. Upper surfaces of hands and feet light grey, darkening distally; the digits dusky. Tail gradually darkening distally; in its proximal half not darker than the mid-dorsum; its terminals half black.

Type.—A half-grown female in the Calcutta Museum (No. 31d. of Blyth's Catalogue, 14d. of Anderson's Catalogue), received from the Barrackpore Menagerie. Of the material before me, I have taken the adult male No. 282 obtained by Mr. Wells at Tura in the Garo Hills as being a typical specimen.

Remarks.—The more important statements made by Blyth with regard to his type are:—"general colour a delicate soft-grey, rather darker on the upper part of the back, and slightly inclining to albescent on the arm, forearm, and leg"; "sides of the crown blackish"; "hair of cheeks whitish and strongly contrasted being considerably lengthened laterally and posteriorly, so as to hide the lower part of the ear, behind which there is also some similar long and glistening whitish hair continued from beneath"; "whole of lower parts and inside of the limbs dull fulvous white." Anderson describes the same specimen as being "light coloured; under parts pale-yellow; no trace of orange. General colour of upper parts and outside of limbs greyish or fuliginous, darkest on the front of the head and on the shoulders." These details apply so exactly to the subspecies inhabiting the Garo Hills that I have no hesitation in identifying it with the animal originally described by Blyth.

The young male from Konshong (Wells, No. 855) is very interesting. The terminal third of the tail is ochraceous instead of black as in the adults, while the proximal part is grey like the back. Possibly an ochraceous tail-tip is a normal feature of the juvenal pelage, the tail becoming black distally only in later coats.

Specimens obtained by Mr. Mills in the Naga Hills show that this subspecies ranges far to the eastwards, the lower limit of the altitude at which it occurs increasing in that direction. Mr. Mills informs me that in the Nagas this form is only found in the high cool jungle occurring above 4000'. The subspecies next described *P. p. saturatus*, is found on the floor of the valley and at lower levels on the flanks of the hills. It and true *pileatus* are never found together; and no individuals of an intermediate character or appearance have been seen.

2. *Pithecus pileatus saturatus*, subsp. n.

Lakhimpur.—Bara Hapjan (200'), ♂ 30, ad., 31.

Sebsagar.—Golaghat (300'), ♂ 234, ♀ 161, 162.

Naga Hills.—Lakhuni (1,500'), ♂.

N. Cachar.—Lanka (400'), ♂ 1,031. Lamsakhang (800'), ♂ and ♀.

This subspecies differs from *P. p. pileatus*, as above defined, in having the whiskers and under parts deep orange, instead of white on pale ochraceous.

General dorsal colour dusky brown; the rump decidedly darker and browner than in *p. pileatus*. Whiskers, flanks and under parts bright reddish orange; none of the hairs white or whitish in adults. Outer surfaces of limbs dark brown; on the leg the part between the knee and the ankle scarcely paler than the outer surface of the thigh; inner surfaces of limbs deep ochraceous. Hands and feet blackish from wrists and ankles. Tail with the proximal half like the back; its distal half black.

Type.—Adult male, B. M. No. 21.7.13 5. Original No. 30. Collected at Bara Hapjan, Lakhimpur, Upper Assam, on November 2nd, 1919, by Mr. H. W. Wells. Presented to the British Museum by the Bombay Natural History Society. For measurements see tables at pp. 82-83.

Remarks.—Although technically the pale coloured animal inhabiting the Garo Hills and the higher parts of the Nagas is the typical subspecies, the present form represents a phase of more normal colour.

P. p. saturatus is the subspecies met with in the valley of the Brahmaputra, upon the low ground between the river and the Naga Hills; it ascends the slopes of those hills for some distance, but does not reach the cool jungles, at high altitudes, inhabited by *P. p. pileatus*. The exact limits of the range of *saturatus* are unknown, and may be far more extensive than the specimens before me would indicate, for those described by Blyth and later by Anderson from the hills of Tipperah and Chittagong seem, from the descriptions published, to be very similar to those upon which *saturatus* is based.

3. *Pithecus pileatus tenebricus*, subsp. n.

North Kamrup.—Matunga River, ♂ 1296, ad.

Menaka Nadi (500'), ♂ 1363 ad.

Bogra Nadi (2,000-3,000'), ♂ 1352, juv., ♀ 1311, 1312, ad.

Characterized by its dark coloration, inconspicuous flanks and dusky limbs.

General colour of upper parts dusky; the head cap black, paling gradually backwards into a blackish or very dark grey upon the rump. Some of the hairs, especially upon the nape, with light-coloured or silvery tips. Dark dorsal area not narrow; the bright flanks scarcely visible in the dorsal view. Dorsal margins of whiskers and flanks pale ochraceous posteriorly, becoming redder ventrally. Under parts

generally ferruginous as in *p. saturatus* but the tint not so intense as in the latter. Outer surfaces of arms and legs dusky ; thighs and legs between knees and ankles concolorous with each other, and with the rump and lower back. Hands and feet black above ; the feet more or less grizzled with whitish hairs. Proximal half of tail blackish grey, its distal half jet black.

Type.—Adult male, B. M. No. 21.7.13.8, Original No. 1296.

Collected by Mr. H. W. Wells at Matunga River, North Kamrup, December 31st, 1920. Presented to the British Museum by the Bombay Natural History Society. For measurements see tables at pp. 82–83.

Habitat.—Northern Kamrup.

4. *Pithecus durga*, Wr.

5. *Pithecus shortridgei*, Wr.

6. *Pithecus brahma*, Wr.

With regard to these species it is not necessary for me to add anything to the descriptions published by Wroughton in this Journal in 1916 (Vol. XXIV., p. 653), nor to the remarks made in opening the present paper.

The following are the measurements of the various members of the *pileatus* group now before me.

External measurements of *Pithecus pileatus* in millimetres. (Taken in the flesh by the Collector, Mr. H. W. Wells).

----	Head & body.	Tail.	Hind- foot.	Ear.	Weight.
<i>Pithecus pileatus pileatus</i> .					
GARO HILLS: Tura, ♂ ad.					
No. 282	700	1,025	190	34	
JAINTA HILLS: Ranang, ♀					
ad. No. 918	570	870	185	30	21.5 lbs.
KONSHONG ♂ juv. No. 855	310	435	110	28	5.2
" ♀ " " 861	310	580	130	28	
<i>Pithecus pileatus saturatus</i> .					
LAKHIMPUR: Bara Hap- jan, ♂ ad. No. 30.. ..	685	978	193	33	(TYPE)
SEBSAGAR: Golaghat, ♂ ad.					
No. 234	583	990	197	30	
Golaghat, ♀ ad. No. 161.	500	830	180	30	
NORTH CACHAR: Lanka, ♂					
ad. No. 1031	580	1,020	230	36	27 lbs.
Lamsakhang, ♀ ad.					
No. 1010.	490	840	160	26	
<i>Pithecus pileatus tenebricus</i> .					
NORTH KAMRUP: Matunga					
River. ♂ ad. (TYPE)	560	910	180	40	19.5
No. 1296	520	895	182	40	
Menaki Nadi. ♂ ad. No. 1363					
Bogra Nadi, ♀ ad. No. 1311.	450	710	160	40	
♀ ad. " 1299.	560	850	175	40	

Skull measurements of *Ptilopus pileatus* and allies (Millimetres).

Adult Males.		Extreme length.	Condyllo-Basilar length.	Zygomatic breadth.	Cranial breadth.	Post orbital breadth.	Greatest width across orbits.	Width of palate across m2-m2.	Canine to m3.	m1 to m3.
<i>P. p. pileatus</i> . Garo Hills, No. 282	..	115.5	85	88.3	64	49	69	37	35.5	19.6
	..	119	87	..	67	51	75	38.5	37.5	20
<i>P. p. saturatus</i> . Lakhimpur, No. 30 (Type)	..	116.5	87.5	87.5	64.5	52.5	76	40	33.5	18.2
	..	120	90	86	64	49.5	72	38	36.5	20
<i>P. p. tenebrius</i> . N. Kumrup, No. 1296 (Type)	..	104.5	76	81	65	45.5	67	35	34.5	19.5
<i>P. brahma</i> . Lakhimpur, B. M. 13.2.21.1 (Type)	..	109	80.5	81	62	51	68	40	35.5	19.7
<i>P. durga</i> . " Lower Assam " , B. M. 86.10.18.1 (Type)	..	116.5	88	86	64.5	50	73	40	37.5	21.5
<i>P. shortridgei</i> . Chindwin, B. M. 15.5.5.10 (Type)	..	114	87	90.5	63	50	78	39.5	38.5	21.5
	..	114	84.5	92	62.5	51	75	39.5	37	20.5
	..	110	82	85	64	54	77.5	38	38	21